

## CLAIMS

1. A defect analysis apparatus for a semiconductor integrated circuit characterized in that a presence/absence of a defect is detected by irradiating an electromagnetic field from a probe and detecting a power supply current variation.
2. A defect analysis apparatus for a semiconductor integrated circuit characterized in that a presence/absence of a defect is detected by irradiating an electromagnetic field from a probe and detecting a voltage variation, an impedance variation or an electric characteristic variation.
3. The defect analysis apparatus for a semiconductor integrated circuit according to claim 1 or 2, characterized in that said power supply current variation, said voltage variation, or said impedance variation is detected by activating an open gate or a gate potential.
4. The defect analysis apparatus for a semiconductor integrated circuit according to any one of claims 1 to 3, characterized in that said power supply current variation, said voltage variation or said impedance variation is detected by exciting the probe with modulation and synchronizing with a signal applied to the probe.
5. The defect analysis apparatus for a semiconductor integrated circuit according to any one of claims 1 to 4, characterized in that a defect is

detected by measuring heat radiation and light emission radiation caused by said power supply current variation, said voltage variation or said impedance variation.

6. A defect analysis apparatus for a semiconductor integrated circuit characterized in that an electric characteristic variation in the semiconductor integrated circuit is detected by activating an open gate or a gate potential.

7. The defect analysis apparatus for a semiconductor integrated circuit according to claim 5, characterized in that a power supply current variation is applied to the semiconductor integrated circuit and the open gate or the gate potential is activated.

8. The defect analysis apparatus for a semiconductor integrated circuit according to claim 6 or 7, characterized in that the open gate or the gate potential is activated by irradiating an electromagnetic field from a probe.

9. The defect analysis apparatus for a semiconductor integrated circuit according to claim 8, characterized in that said electric characteristic variation is detected by exciting the probe with modulation and synchronizing with a signal applied to the probe.

10. The defect analysis apparatus for a semiconductor integrated circuit according to any one of claims 1 to 9, characterized in that a defect

position is identified from differential information on a defective product and on a normal product.

11. The defect analysis apparatus for a semiconductor integrated circuit according to any one of claims 1 to 10, characterized in that irradiation of an electromagnetic field from the probe or activation of the open gate or the gate potential is performed on a substrate side.

12. The defect analysis apparatus for a semiconductor integrated circuit according to any one of claims 1 to 11, characterized in that a defect portion is determined by mutually referring to position information on the probe and design information on a chip.

13. The defect analysis apparatus for a semiconductor integrated circuit according to claim 12, characterized in that if a defect portion and a detected abnormal portion are different, a wiring path of a wiring including an area of the detected abnormal portion is analyzed by referring to design data.

14. A manufacture method for a semiconductor device comprising: a design step of designing a wiring pattern of the semiconductor device; a manufacture step of manufacturing the semiconductor device in accordance with the design information; an inspection step of inspecting the manufactured semiconductor device or the semiconductor device during manufacture; and an analysis/evaluation step of analyzing or evaluating the

test result, wherein the analysis/evaluation step irradiates an electromagnetic field from a probe to a wiring of the semiconductor device, and detects a defect portion by detecting a power supply current variation, the semiconductor device is manufactured if the defect result clears predetermined conditions, whereas a defect reason is identified in accordance with the analysis result if the defect result does not clear the predetermined conditions, and the defect reason is fed back to manufacture processes.